5.0 WASTE ANALYSIS PLAN

22 CCR 66270.14(b)(3)

The attached Exhibit 5-1 provides the WAP required by 22 CCR 66270.14(b)(3).

EXHIBIT 5-1

WASTE ANALYSIS PLAN

WASTE ANALYSIS PLAN

CWMI Corporate Revision
June 26, 1997
Revision 17

KETTLEMAN HILLS FACILITY
KINGS COUNTY, CALIFORNIA

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WASTE ANALYSIS PLAN

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APPENDICES

1.0 INTRODUCTION

In accordance with Federal regulations set forth in 40 CFR Part 264.13 and State of California regulations found in 22 CCR 66264.13, Chemical Waste Management, Inc./Waste Management, Inc. (CWM) has developed this Waste Analysis Plan (WAP) for its Kettleman Hills Facility (KHF) located in Kings County, California. The plan is an integral component of the facility's RCRA Part B Permit Application. A copy of the WAP will be available at the facility at all times.

The purpose of the WAP is to document the necessary sampling methodologies, analytical techniques, and overall procedures which are undertaken for all hazardous wastes (hereinafter "wastes") that enter the facility for storage, treatment, and/or disposal. Specifically, the plan delineates the following:

- Sampling Methodologies to obtain samples from waste shipments entering the facility (see Section 2.0)

- Analytical Parameters and Rationale to document the decision logic for the selection and application of various analytical parameters used to determine certain waste properties to ensure proper management of the waste (see Section 3.0)

- Pre-Acceptance Procedures to determine the acceptability of a particular waste stream pursuant to facility permit conditions and operating capabilities prior to any acceptance of that waste at the facility (see Section 4.0)

- Incoming Waste Shipment Procedures to identify that the delivered waste matches the accompanying manifest, pre-acceptance documentation, and the conditions of the facility's permits (see Section 5.0)

- Process Operations Procedures to maintain safe and appropriate methods of storage, treatment, movement, and disposal of wastes within the facility (see Section 6.0)

- Quality Assurance/Quality Control Procedures to ensure the accuracy and precision of sampling and analysis activities (see Section 7.0)

It is the policy of CWM/Waste Management that all wastes handled by the facility will be subject to these procedures as applicable. This is to help ensure that the facility will be in compliance with applicable permits and regulations. The forms shown within this WAP are typical forms currently used by the facility. These forms may change to equivalent or alternative forms based upon changes in regulations, customer needs, facility operations, company policy, or other needs. KHF maintains generator-supplied and company-developed information, decisions and forms. This documentation may be received, stored, transmitted, and/or retrieved electronically in addition to, or in lieu of, hard (paper) copy.

The Laboratory, Technical, Operations, Environmental or General Managers or their designee(s) may, hereinafter, be referred to individually or collectively as "facility management".

For the purposes of implementation and performance of this WAP, "CWM/Waste Management" and/or "laboratory" means the KHF laboratory, any CWM/Waste Management laboratory, any CWM/Waste Management subsidiary laboratory, or any CWM/Waste Management approved contract laboratory.

CWM/Waste Management strives to maintain, at all times, complete compliance with the hazardous waste regulations. Because new testing requirements, such as those promulgated under the land disposal restrictions, often become effective prior to the time WAP revisions can be formally made and approved by all appropriate agencies, it is impossible to have in place an approved WAP meeting all the conditions of the immediately effective regulatory requirements.

In light of these facts, the facility has in place a protocol specifying the testing and frequency of testing requirements prior to acceptance and/or processing of the regulated waste. The facility may periodically revise the protocol to reflect scientific advances or additional regulatory requirements.

The sampling and analytical procedures established for the treatment, storage and disposal of certain Land Disposal Restricted hazardous wastes are contained in Appendix WAP-C.

2.0 SAMPLING METHODOLOGY

Samples of the incoming waste are taken by CWM/Waste Management personnel to identify waste shipments. Samples are taken by the waste generator to make the initial waste determination at the point of origin. Specific sampling procedures are dependent on the nature of the material, the type of containment, and knowledge of the waste components. This section presents sampling methodologies to be used by CWM/Waste Management personnel. Waste generators are referred to 40 CFR Part 261, Appendix I for appropriate sampling procedures.

When a waste shipment arrives at the facility for management, a determination previously has been made that the material is either:

- A listed hazardous waste as defined in Subpart D of 40 CFR Part 261 or as defined in CCR, Title 22;
- A characteristic hazardous waste as defined in Subpart C of 40 CFR Part 261 or 22 CCR 66261;
- A recyclable hazardous waste, as defined by 40 CFR Part 261.6 or 22 CCR 66261.6; or
- A solid waste which is not hazardous waste as defined in 40 CFR Part 261.4(b) or 22 CCR 66261.41(b).

The waste characterization provides CWM/Waste Management with information concerning the distribution and nature of the waste components. Therefore, as described in US EPA document SW-846, a sampling approach that is less comprehensive than that used by a generator to make the initial waste determination is appropriate for incoming waste shipments. After its arrival at the facility, unless otherwise stated in Section 5.1.1, the shipment of material is sampled and analyzed to ensure that it matches the overall identity of the waste designated on the accompanying manifest (or shipping paper) and the pre-acceptance paperwork. The analyses also help to ensure that the appropriate treatment, storage, or disposal technique(s) can be utilized.

The sampling equipment and procedures described in this WAP represent the facility's recommended sampling protocol for general types of waste material and containment. Specific waste materials or shipments may require different sampling techniques. Therefore, deviations from the recommended protocol described in this WAP may be required. All methodologies will be updated and revised as the references are updated and revised.

2.1 Sampling Techniques

At a minimum, the sampling methods and equipment used by CWM/Waste Management for specific materials correspond to those referenced in 40 CFR Part 261, Appendix I, and 22 CCR 66261, Appendix I. The sampling methods and the equipment used for different materials are presented on Table 2-1 in Appendix WAP-A. CWM/Waste Management and KHF may modify the technique as necessary to obtain a sample (see comments following 40 CFR Part 261.20(c)

and 22 CCR 66261.20(c)). A description of the various types of sampling equipment is available in SW-846 (see reference in Table 2-1).

2.2 Sampling Strategies

In addition to American Society for Testing and Materials (ASTM) and EPA sampling procedures, CWM/Waste Management has instituted specific methodologies for taking samples from various types of containers. The types of material containment include drums, roll-off boxes, lugger boxes, tank trucks, or dump-type trucks. In addition, the wastes in facility waste management units such as tanks, surface impoundments, or sumps may be sampled and analyzed. The sampling devices are selected depending on the size and type of the containment and on the specific material involved. In most instances, drummed liquids and semi-solids are sampled with tubing. The EPA-sanctioned procedure for the open tube sampler, described in SW-846, has been adopted for use at the facility.

2.2.1 Containers and Tanks

Sampling of small containers (for example, drums, cartons, and other small units) varies with the nature of the waste material. For flowable materials, the sampling device of choice is a Coliwasa unit, tubing, or other appropriate sampling device. For non-flowable wastes, an open tube, trier, scoop, shovel or other appropriate sampling device is used to obtain a sample.

Large containers and tanks containing flowable materials are sampled with a Coliwasa, tubing, weighted bottle or bomb sampler or via tank sampling ports, or by other appropriate means. Light, dry powders and granules in bulk containers are sampled with a tube or other appropriate sampling device. Heavier solids are sampled by trier, shovel, heavy tubing or other appropriate sampling device. Tank sediments are sampled from the bottom sampling valve when they cannot be sampled by other means.

2.2.2 Surface Impoundments

A weighted bottle, dipper sampler, pump or other appropriate sampling device is used to obtain a sample from the impoundment. If more than one sample is collected, the samples may be composited prior to analysis.

2.2.3 Process In-line Sampling

The sampling frequency used to verify that processing units (e.g. stabilization) are continuing to meet treatment standards, will vary depending upon the type of waste (bulk versus drum), waste stream variability and background data. This variability can be determined from a knowledge of the process producing the stream or from the results of previous waste stream analyses. The sampling procedures consist of obtaining samples from designated in-line sampling points in the process stream and, if appropriate, compositing them for analysis.

The sampling frequency used to verify that processing units, such as stabilization, are continuing to meet treatment standards varies, depending on the type of waste (bulk vs. drum), waste stream-specific variability, and background data.

3.0 ANALYTICAL RATIONALE

Analyses are conducted by KHF's laboratory to identify the incoming waste shipments and to ensure compliance with facility acceptance criteria. Analyses are also utilized to provide data necessary for proper waste handling. The waste characterization is obtained by CWM/Waste Management on the waste profile (see Figure 4-1 for a typical form). CWM/Waste Management obtains all the information required by 40 CFR Part 264.13(a)(1) [as outlined in 40 CFR Part 264.13(a)(2) and comment] and 22 CCR 66264.13(a)(1) [as outlined in 22 CCR 66264.13(a)(2)]. See Section 4.1 for a detailed discussion. Analytical methods are classified as either "mandatory" analyses or "supplemental" analyses, as described below:

- Mandatory analyses are performed (as needed) on preacceptance and incoming shipment samples (except as noted in section 5.1.1) in order to further identify a waste shipment as corresponding to a manifest and a waste profile. Mandatory analyses may also be performed to confirm the pre-acceptance paperwork information.

- Supplemental analyses are requested by the facility management to augment existing information on the waste in order to further identify a waste or to further ensure that the appropriate management technique can be utilized.

At a minimum, all waste samples are subjected to the mandatory analyses as a first step in the analytical scheme (unless no analytical is required as provided in sections 4 and 5). Facility management may select additional supplemental analyses according to need. This arrangement allows a tiered approach to waste identification, enabling KHF to structure the analyses to adequately identify the waste or to define operational parameters for various treatment processes.

Most analyses utilize procedures from authoritative sources such as the EPA, American Society of Testing Materials (ASTM) or Standard Methods for the Examination of Water and Wastewater. Where standardized methods are not available, unique procedures and protocol that meet CWM/Waste Management performance standards are used. Certain mandatory and supplemental analyses have been developed by KHF. Analytical parameters and the rationale for their use are provided below and test procedures are provided in Appendix WAP-B. Analyses are not necessarily repeated for sequential activities or movement of the same waste within the facility unless required by changes in the waste's character, as determined by facility management. Facility management may waive specific mandatory or supplemental analyses if performing the analyses presents a safety hazard to facility personnel. This waiver will in no way cause the facility to mismanage the waste stream or to manage the waste stream to a lesser degree than required by regulation.

Other parameters not listed may be added as required (by changes in regulations, processes, waste streams, etc.). The techniques used for these parameters are as follows:

- Among those listed in Appendix WAP-B,

- From sources listed in the references at the end of Appendix WAP-B,

- From other authoritative sources of standard procedures, for example, EPA or Association of Official Analytical Chemists (AOAC), or

- Among those developed by CWM/Waste Management through its operating experience for general waste identification and/or proper waste management and which meet CWM/Waste Management performance standards.

The waste management unit parameters for tanks, impoundments, and landfills discussed in the various operation plans in the part B application represent current and proposed criteria for KHF. They should not be considered strict, unchangeable limitations. As a consequence of changes in incoming wastes, market conditions, facility operations (for example, availability of process or unit capacities), regulations, etc., it may be necessary to reassign a specific tank or impoundment to a different waste management operation or to expand the list of parameters for a given unit. Should such changes be warranted, KHF will conduct the necessary review to ascertain the acceptability and compatibility of the new waste with the wastes previously stored/treated in the unit.

In the event that the wastes targeted for a unit is potentially incompatible with the unit's previous use, the unit will be decontaminated/cleaned out prior to the new service.

3.1 Mandatory Analyses

Mandatory analyses include seven (7) basic screening procedures that are performed to provide a general identification of the waste and to indicate the type of treatment, storage, and/or disposal that is most suitable. The parameters and associated rationale for these analyses, as shown in Figure 3-1, are as follows:

- Physical Description is used to determine the general physical properties of the waste. These properties facilitate subjective comparison of the sampled waste with prior waste descriptions. Also, it is used to verify the observable presence or absence of free liquids. Viscous, adhesive or cohesive material due to the presence of moisture that cannot be visually observed as free-flowing is tested for free liquids.

- Water Compatibility is used to determine whether the waste has a potential to react vigorously (for example, bubbling, spattering, or fuming) with water to form gases or other products, or to generate significant heat, and to determine its apparent solubility in water. This test does not apply to wastes that already are in contact with excess water (50% by volume), nor to wastes that are known to be water reactive.

- pH Screening is used to indicate generally the pH and corrosive nature of an aqueous waste. pH screening may not apply to certain wastes (for example, organic solvent waste, oily waste, or insoluble solid waste).

- Flammability Potential Screening is used to indicate the fire-sustaining potential of the waste. This test can be applied to all waste liquids, solids, and semi-solids.

- Cyanides Screening indicates whether the waste has the potential to produce hydrogen cyanide upon acidification below pH 2. This screen is not required if the pH is less than 2 (as defined in 40 CFR Part 261.23(a)(5) and 22 CCR 66261.23(a)(5)) or if the material is organic.

- Sulfides Screening indicates whether the waste has the potential to produce hydrogen sulfide upon acidification below pH 2. This screen is not required if the pH is less than 2 (as defined in 40 CFR Part 261.23(a)(5) and 22 CCR 66261.23(a)(5)) or if the material is organic.

- Oxidizer Screening is used to indicate the oxidizing potential of a waste.

3.2 Supplemental Analyses

Supplemental analyses are performed to further identify the waste, as appropriate. The results of these analyses provide facility management with another level of confidence concerning the identification of a waste shipment or the proper means of treatment, storage, and/or disposal. Each treatment, storage, and/or disposal unit has a unique set of limitations. Once the facility management has made a preliminary decision as to the acceptability of the waste at a particular unit (that is, the targeted unit), the laboratory may conduct supplemental analyses, as necessary, to assure that the waste does not exceed a parameter limitation for that unit (see the applicable operations plan in the Part B application for unit-specific limitations and criteria). Some of these additional analyses use unique procedures and protocols developed by CWM/Waste Management through it's operating experience for general waste identification and meet CWM/Waste Management performance standard. Others are standard analytical techniques recognized by the EPA and ASTM.

- Percent Acidity determines the acidity in the waste by species. It may be used if the waste is aqueous and has a pH less than or equal to 4.

- Percent Alkalinity determines the amount of alkalinity in the waste by species. It is used if the waste is aqueous and has a pH greater than or equal to 10.

- Beilstein Screen is used to indicate the presence of halogenated organics in aqueous and organic wastes.

- Commingled Liquid Waste Compatibility determines whether liquid wastes are compatible and can be stored or processed together.

- Total and Amenable Cyanides quantifies the concentration of all unbound and most complexed cyanides (total cyanides) and/or cyanide species amenable to alkaline chlorination (amenable cyanides). Results may be used for treatability determinations, to monitor treatment processes, and/or to meet disposal restrictions including Land Disposal Restrictions.

- Soluble Cyanides determines the concentration of soluble cyanides.

- Density measurements are made to verify the quantity of bulk liquids received.

- Flash Point further characterizes ignitable wastes to establish proper storage methods and conformance with permit conditions. A closed cup is used for liquids.

- Gas Chromatography Scan separates and identifies organic compounds.

- Metals (for example, Ag, As, Ba, Be, Ca, Cd, Cr, Cu, Hg, Pb, Ni, Sb, Se, Tl, V, or Zn) concentrations may be determined to project potential salt precipitation, set process operating parameters, or monitor waste treatment processes.

- Specific Organics indicates the concentrations of specific organics compounds.

- DOT Oxidizer Test is used to determine the oxidizing potential of a waste as defined by the U. S. Department of Transportation.

- Paint Filter Liquids Test indicates if free liquids are present in solid or semi-solid material.

- PCB Screening is used to screen for the presence of PCBs at the detection limit of 4 ppm.

- PCBs are run to indicate whether PCBs are present in oil-bearing liquid wastes and to ascertain their concentration. An oil-bearing liquid is defined as liquid containing a visible oil phase separation.

- pH provides a more precise measurement of pH and an indication of corrosivity when determining process parameters.

- Radioactivity Screening determines if the waste material contains any radioactivity above background levels.

- Stabilization Evaluation Test (SET) determines whether the waste is amenable to stabilization.

- California % Moisture Test California Code of Regulations Title 22: 66264.318.

- Toxicity Characteristic Leaching Procedure (TCLP) determines whether a waste or a treated waste residue contains concentrations of restricted constituents above appropriate treatment standards.

- Viscosity determines the waste's pumpability.

- Waste Extraction Test (WET) determines whether a waste or a treated waste residue contains concentrations of restricted constituents above appropriate treatment standards.

Other parameters not listed here may be added as required (by changes in regulations, processes, waste streams, etc.). The applicability of the lists of supplemental analyses are described in Figure 3-2.

4.0 PRE-ACCEPTANCE PROCEDURES

CWM/Waste Management has developed a series of control procedures to determine the acceptability of specific wastes for management at the facility. These pre-acceptance control procedures dictate what information a potential customer must provide to enable CWM/Waste Management to determine the acceptability of the waste for treatment, storage, and/or disposal. At a minimum, all of the information required by 40 CFR Part 264.13(a)(1) [as outlined in 40 CFR Part 264.13(a)(2) and comment] and 22 CCR 66264.13(a)(1) [as outlined in 22 CCR 66264.13(a)(2)] to identify, treat, store, or dispose of the waste is obtained.

Pre-acceptance control is a mechanism for deciding to accept or reject a particular type of waste based on limitations imposed by existing permits, regulations, and/or technical considerations. Technical consideration includes the effectiveness of a treatment/disposal process for a particular waste and the compatibility of wastes being treated, stored, or disposed of at the facility. The pre-acceptance procedures for this facility may be carried out at this facility, another CWM/Waste Management facility or CWM/Waste Management approved facility, or upon receipt of the shipment prior to its acceptance.

The pre-acceptance procedures include the following steps:

- Waste information - CWM/Waste Management obtains sufficient information to make a decision regarding the management of a candidate waste stream.

- Initial review - The waste information and, if necessary, screening (mandatory) analyses of a requested sample by the laboratory allows CWM/Waste Management to conduct an initial evaluation of the information and waste material for appropriate management techniques.

- Disposal decision process - CWM/Waste Management documents the initial pre-acceptance procedure evaluation for the acceptance or rejection of the candidate waste stream. In addition, any special management practices required for an accepted stream may be specified at this time.

- Re-evaluation process - This process includes procedures for when the re-evaluation of a waste stream is conducted once it has been accepted.

4.1 Procedural Requirements

The following procedures apply to each new waste stream and, as required, to site generated waste that are candidates for management at the facility:

I. CWM/Waste Management will obtain the following:

   A) Pertinent chemical and physical data on the waste profile (or an equivalent or alternate form), shown as Figure 4-1;

B) A representative sample, if required. A representative sample may not be required by CWM/Waste Management if facility management determines that the pre-acceptance documentation provides sufficient information to maintain compliance with permit and operational constraints and obtaining a sample would not aid in the disposal decision process. When necessary, this sample may be obtained by CWM/Waste Management upon receipt of the initial shipment of the waste prior to acceptance. Also see Section 4.2;

C) Land Disposal Restriction Notification/ Certification Information and Data, in accordance with 40 CFR Part 268 and 22 CCR Chapter 18 (22 CCR 66268);

D) Other supporting documentation such as additional analytical results, Material Safety Data Sheet (MSDS), product ingredients, etc.; and

E) If the waste is in the form of a lab pack, the generator will describe the contents of the drum and provide a statement that the lab pack meets the requirements of 22 CCR 66264.316. The generator of a lab pack waste will supply the appropriate LDR notification/certification forms for lab packs.

II. On occasion, analysis may be necessary on a sample(s) of the waste in order to provide the facility with the information needed to determine if the waste can be managed and/or to determine if the waste material matches the identity of the waste designated on the accompanying pre-acceptance paperwork. When a pre-acceptance sample is necessary, CWM/Waste Management will have the mandatory analyses performed on the sample. Analyses will be done for the parameters outlined in Section 3.0. The sample may be retained by CWM/Waste Management for future reference, if necessary. If the sampling is performed by CWM/Waste Management, it will be done in accordance with the procedures outlined in Section 2.0.

III. After evaluating the above information and any data obtained by the laboratory, CWM/Waste Management will determine the acceptability of the waste based on: (1) the applicable regulations, (2) the permit conditions for the facility and (3) the availability of the proper waste management techniques.

4.2 Standard Profiles

Standard profiles may be used for waste streams which are similar in physical and chemical characteristics, generated by similar industries or processes, consistent with the USEPA approach of assigning a listed waste code to similar process wastes.

An analytical database will be developed for a specific standard profile based on analytical data from waste streams that are representative of wastes from similar industries, processes or historical data. Facility management will review the database and determine whether the individual waste streams are sufficiently similar in physical and chemical characteristics to an established standard profile. The analytical database developed as discussed above will replace the requirement for a pre-acceptance sample (see Section 4.1) for each individual waste stream.

Specific candidate waste streams which, upon review, are identified as conforming to an existing approved standard profile will be managed under the existing waste management decision specific for that standard profile.

4.3 Decision Evaluation Logic

Facility management is responsible for the pre-acceptance evaluation decision (that is, whether to accept or reject the waste). A general logic diagram of the pre-acceptance process is presented in Figure 4-2.

The pre-acceptance disposal decision evaluation is concluded with a documentation of the decision regarding the acceptability of the waste and the proposed method of management.

Facility Management's technical disposal decisions are based on:

- Management methods available;
- Conditions or limitations of existing permits and regulations;
- Capability to manage the waste in a safe and environmentally sound manner;
- Description of the process generating the waste;
- Description of the chemical and physical properties of the waste;
- Any additional documentation supplied for the waste stream, including information that the waste is subject to the Land Disposal Restrictions of 40 CFR Part 268 and 22 CCR Chapter 18, if appropriate;
- Results of mandatory analyses, when required;
- Results of supplemental analyses, as appropriate; and
- Facility management's technical experience and judgment.

4.4 Waste Profile Re-evaluation

In accordance with 40 CFR Part 264.13 and 22 CCR 66264.13, a waste profile re-evaluation will be conducted when one of the following occurs:

- Every 24 months, or
- A generator notifies CWM/Waste Management that the process generating the waste has changed; or

- The results of inspection or analysis indicate that the waste received at the facility does not match the identity of the waste designated on the accompanying manifest or shipping paper or pre-acceptance documentation, in which case the procedure in section 5.2 is followed.

When this occurs CWM/Waste Management will review the available information. If available analytical data is not sufficient, the generator may be asked to review the current waste profile, to supply a new profile, to supply additional information or analytical data, and/or to submit a sample for analysis, or KHF may obtain a sample from a shipment of the waste.

5.0 INCOMING WASTE SHIPMENT PROCEDURES

After arrival at the facility, each shipment of waste is inspected, sampled, and analyzed as described herein before the initiation of any further activity (except as noted in Section 5.1.1). This serves two purposes: (1) to compare the actual waste identity with that determined in the pre-acceptance procedures and those listed on the waste manifest, and (2) to ensure the proper disposition of the waste to treatment, storage, and/or disposal. In the event that the container type prohibits an adequate visual inspection (e.g. a compactor bin) other measures will be taken to obtain a complete visual inspection. Materials to be transferred off-site without treatment or processing are not sampled or analyzed, but the unopened containers are visually inspected for container integrity.

In addition, for each waste that is prohibited under regulatory Land Disposal Restrictions and have been treated, exempted, varianced, or meet the appropriate treatment standard or prohibitions without treatment, the treater or generator must submit a one-time written notice with the initial shipment that the waste meets the appropriate treatment standard, prohibition, exemption, or variance (or that the waste naturally meets the appropriate treatment standard in accordance with 22 CCR 66268.7 and 40 CFR 268.7).

Furthermore, all wastes which are prohibited under regulatory Land Disposal Restrictions and require treatment, the generator/treater must submit a one-time written notice with the initial shipment notifying the treater of the appropriate treatment standards and all applicable prohibitions which must be met (in accordance with 22 CCR 66268.7 and 40 CFR 268.7).

For containerized waste intended for landfilling where the generator (or treater) has previously identified (see Section 4.1) that sorbents have been added to the waste to sorb free liquids, a determination will be made, prior to disposal, that certification has been received from the generator (or treater) that no biodegradable sorbents (as described in 40 CFR Part 264.314(e)) are included in the waste in accordance with 40 CFR Part 264.13(c)(3).

5.1 Receiving Procedures

Incoming waste shipment identification begins after arrival of the waste at the facility. The inspection, sampling, and analysis of the incoming waste are performed in accordance with the methods and parameters described in Sections 2.0 and 3.0 herein. The incoming shipment mandatory and supplemental analyses are described in sections 3.1 and 3.2 of this WAP. Other CWM/Waste Management personnel (or a CWM/Waste Management-approved laboratory) can provide the sampling and mandatory and/or supplemental analyses required by this WAP prior to or concurrent with the arrival of the shipment. Waste shipments that have arrived at the facility are considered to be in the receiving process until such time that the laboratory and/or facility management makes a final decision regarding waste acceptability; at such time the wastes are considered accepted.

Unless provided otherwise in Section 5.1.1, in order to identify waste properties and ensure the acceptability of waste shipments of drums or portable tanks, one out of each ten containers is opened, sampled, and analyzed for the Section 3.1 mandatory analyses and, as needed, Section

3.2 supplemental analyses. Container samples that are compatible may be composited. No more than ten individual container samples may be composited to form a composite sample for analysis.

Incoming bulk solid wastes that, due to the process generating the waste, may be received at an elevated temperature or any bulk solid waste that gives the appearance of having excess heat and an elevated temperature will be subjected to the thermal measurement procedure for bulk solid waste. This procedure is described in Appendix WAP-E entitled Thermal Measurement Procedure for Bulk Solid Waste.

All bulk waste shipments are inspected and, with the exceptions of those specified in Section 5.1.1 and as follows, are sampled and analyzed for the Section 3.1 mandatory analyses and, as needed, Section 3.2 supplemental analyses. When more than one load of waste is received from one profile (for example, a major site clean-up of contaminated soil), all shipments are visually inspected and at least 10% of the shipments are sampled and analyzed, unless otherwise specified in Section 5.1.1.

5.1.1 Exceptions

Exceptions to the foregoing requirements include the following:

- Lab packs. This includes, but not limited to, discarded containers of laboratory chemicals, waste, lab equipment, lab clothing, debris from lab spills or clean up, and floor sweepings packed in accordance with 40 CFR Part 264.316 and 22 CCR 66264.316.
- "Empty" containers (as defined by 40 CFR Part 261.7 and 22 CCR 66261.7).
- Single substance contaminant.
- Commercial products or chemicals: off-specification, outdated, unused, contaminated or banned. This also includes products voluntarily removed from the market place by a manufacturer or distributor, in response to allegations of adverse health effects associated with product use.
- Asbestos-containing waste.
- Beryllium-containing waste (for example, from machining operations).
- Articles, equipment, containers, debris, solids, or liquids contaminated with PCB's.
- Non-infectious waste from a hospital, medical facility, nursing home, veterinary hospital, or animal testing laboratory.
- Wastes which are visually identifiable through an inspection process. (Examples include cathode ray tubes, batteries, fluorescent light tubes, filters and filter cartridges, wire or tubing, paper products, metal sheeting and parts, crushed glass, piping, etc.).

- Waste produced from the demolition, dismantling, or renovation of industrial process equipment or facilities. These may include equipment and/or building materials contaminated with chemicals used in the industrial process.

- Waste from a remedial project in which the sampling and analysis plan was approved by a federal or state agency (for example, CERCLA or state equivalent or a project funded by one or more potentially responsible parties).

- CWM/Waste Management site-generated waste, unless otherwise it is required. The site generated wastes include rainwater from collection sumps, rainwater from truck wash sumps, rainwater from trenches, spill clean-ups, etc.

- Debris as defined in 40 CFR Part 268.2 or 22 CCR 66268.2. These materials will be visually inspected after receipt but before shipment acceptance (see Section 5.1) in order to ensure that the waste meets the definition of debris.

- Controlled substances regulated by the Federal Government including illegal drugs and/or materials from clandestine labs.

- Materials which are hazardous under California regulations at CCR Title 22 but not hazardous under federal regulations at 40 CFR Part 261.

- Materials designated for storage and subsequent transhipment off-site. These materials are received at the facility and designated for storage and subsequent transhipment. If it is determined that the facility will process a waste previously designated for storage and subsequent transhipment, the waste will be sampled and analyzed accordingly, prior to any treatment activities.

- Contaminated personal protective equipment (PPE) - This includes but is not limited to gloves, tyveks, respirator cartridges, clothing, etc.

In addition to these exceptions, facility management may waive sampling and analysis where the pre-acceptance information is sufficient to ensure compliance with permit conditions and operational constraints of the treatment process; and any one of the following conditions exist:

- Obtaining a sample poses an unnecessary hazard of acute or chronic exposure of CWM/Waste Management employees to carcinogenic, mutagenic, neoplastigenic, teratogenic, or sensitizing materials; or

- The material may react violently with air or moisture; or

- The material's odor poses a public nuisance when sampled; or

- A sample cannot be reasonably obtained, such as filter cartridges, large pieces of contaminated material, or contaminated debris.

In these cases, the shipment will still be inspected for conformance with manifest documentation as previously described. The unopened containers are at a minimum visually inspected for container integrity. The sampling and analysis of the above materials is not required unless specifically requested by facility management. These materials are not sampled because they present extraordinary health and safety hazards (e.g., asbestos), exhibit unusual or impractical sampling and analytical complication (e.g., PPE, visually identifiable wastes), and/or are of such a nature that their contents are known in sufficient and reliable chemical and physical detail that sampling and analysis is not warranted (e.g., outdated commercial products, waste from a remedial project). CWM/Waste Management will obtain the information required by [Ref: 40 CFR Part 264.13(a)(1)(2) and comment] necessary to treat or store the waste.

5.2 Decision Evaluation Logic

The general logic used by the facility management in deciding whether to accept or reject a particular waste shipment is depicted in Figure 5-1. Major decision points are as follows:

- The need for additional supplemental analyses (1),
- The actual waste identification (2),
- An evaluation of whether a waste is found to be in conformance or non-conformance (3), and
- An evaluation of whether a waste found to be in non-conformance can still be accepted (4).

1. <u>The Need for Additional Supplemental Analyses</u>

   The facility management decides whether additional supplemental analyses are required for a particular waste based on the following:

   - Results of mandatory analyses, as appropriate;
   - Knowledge of generator and/or waste-generating process;
   - Results of pre-acceptance evaluation;
   - Limitations of the targeted waste management unit;
   - Conditions and limitations of existing permits and regulations;
   - Experience of the facility management in determining the need to know more information; and
   - Any additional documentation obtained for the waste stream, including information that the waste is subject to the Land Disposal Restrictions of 40 CFR Part 268 and 22 CCR Chapter 18.

   Further testing will be required if the results indicate unexpected presence or absence of a screen parameter with respect to pre-acceptance analytical results, or if facility management has reason to suspect that the waste composition has changed.

2. The Actual Waste Identification

The effectiveness of the waste identification step is dependent on one or more of the following components:

- Inspection;
- Sampling, if applicable;
- Analytical results;
- Waste profile;
- Any additional documentation obtained, such as MSDS, product ingredient, etc.;
- Waste manifest;
- Appropriate Land Disposal Restriction Notification and/or Certification forms (see Section 5.0);
- Pre-acceptance analytical results, if applicable; and
- Facility management's judgment.

3. An Evaluation of Whether a Waste is Found to be in Conformance or Non-Conformance

Facility management must classify the waste as being in "non-conformance" if it is significantly different in type from the information shown on the manifest (in accordance with 40 CFR 264.72 and 22 CCR 66264.72). In addition, it would also be classified as a significant discrepancy if it is significantly different in weight (volume) or piece count from the information shown on the manifest.

Three (3) major criteria are used to arrive at this decision. They are:

- For bulk wastes, variations greater than 10% in weight (volume);
- For batch wastes, (for example, drums, bags, etc.), any variation in piece count, or any disagreement between the number of pieces listed in the manifest and the number of pieces on the arriving truck; and
- If inspection or analysis of any waste determines obvious differences, for example, in waste type, such as waste solvent substituted for waste acid, or toxic constituents not reported on manifest or shipping paper.

In addition, if the waste is significantly different in composition from the information shown on the waste profile or preacceptance results, facility management must classify the waste as being in "non-conformance".

Waste discrepancies that do not fall within these criteria are considered to be "minor" and usually are not subject to a recharacterization review. If CWM/Waste Management has reason to believe that the variation is a continuing deviation and that a particular waste stream indeed is different from its documented values, CWM/Waste Management will obtain a recharacterization of the waste before any further shipments are accepted. The detection of a waste constituent that was not recorded on the waste profile or manifest would not necessarily trigger recharacterization of the waste stream if the discrepancy could be justified

by the generator, was found to be a one-time anomaly, and all the above-mentioned guidelines were met.

4. An Evaluation of Whether Waste Found to be in Non-Conformance Can Still be Accepted or Should be Rejected

Wastes found to be in non-conformance may be rejected or they may be re-evaluated for possible acceptance by the facility, despite the variance. The re-evaluation will be based on the following criteria:

- Permit authorization;
- Discussions with or information from the generator;
- Facility conditions;
- Facility management judgment; and
- Additional supplemental analysis, if required.

Pursuant to 40 CFR Part 264.72 and 40 CCR 66264.72, facility management must discuss and attempt to resolve with the generator any significant discrepancies between the actual waste and that shown on the manifest. If the shipment is accepted, the manifest is signed and the transporter is given his copies. In addition, a new waste disposal decision may be initiated for the non-conforming waste. Manifest discrepancies will be recorded on the manifest.

If a discrepancy cannot be resolved within 15 days of shipment receipt, the Regional Administrator (or agency administrating the RCRA program) will be notified, in writing, of the discrepancy and of attempts to reconcile it, including a copy of the involved manifest.

The final decision to reject all or part of a waste shipment is made by facility management. Decisions are made as soon as the facility has collected and considered all of the applicable information listed above. The facility strives to complete these decisions as early as practicable, but circumstances which prevent sampling (for example, extreme weather) can cause delays in obtaining the information necessary to make an informed decision on the acceptability of the waste. Under such circumstances, the facility will take appropriate action to facilitate the decision process. During this time proper staging locations within permitted storage areas will be determined using pre-acceptance information. This information (for example, waste profiles, MSDSs, etc.) will provide sufficient information to ensure staging with compatible materials.

A waste may be rejected for one of the following reasons:

- The generator's/transporter's paperwork is not in order;
- A manifest discrepancy or other non-conformance cannot be resolved to the generator's or CWM/Waste Management's satisfaction;
- A bulk liquid shipment is incompatible (fails the liquid waste compatibility test) with waste stored in a bulk liquid storage tank and no other management method is available; or

- Adequate segregated space is not available at the container storage areas for containerized wastes and special handling cannot be used to correct the deficiency.

6.0 PROCESS OPERATIONS PROCEDURES

After a waste has been treated at the facility, it may be subject to additional inspection, sampling, and analysis to determine appropriate handling and management of the waste. Many of the analyses performed during incoming shipment identification may be repeated post-treatment at this time. Periodic sampling and analyses also are important for facility storage, treatment, and disposal operations. The analytical procedures for each of these processes are described separately below.

6.1 Storage

Stored wastes are segregated with respect to compatibility. Also, liquid wastes that are transferred from drums, portable tanks, or tank trucks may be stored temporarily in bulk storage tanks. Before any wastes are placed in a storage unit, facility management will assess the compatibility of the waste with the storage unit materials of construction and with wastes already stored therein. If there is any suspicion of incompatibility, additional evaluation will be performed. The general analytical flow diagram for waste storage operations is shown in Figure 6-1.

6.2 Treatment Operations

The proper and complete treatment of a particular waste depends on appropriate sampling and analysis during selected phases of the operation. The results of this analytical program serve to determine safety constraints, confirm treatment method selection, and identify the process parameters. The treatment sampling and analysis program may be divided into three segments, each with a specific purpose:

- Pretreatment analyses confirm that the waste falls within the selected process design parameters and allow fine tuning of the process operational conditions for optimal treatment

- In-process analyses are performed to control the process and to monitor progress

- Post-treatment analyses will confirm successful treatment and that the process effluent can be sent to the next step (disposal or further treatment) based on permit or process constraints.

Treatment residuals resulting from on-site treatment of Land Disposal Restricted (LDR) waste, destined for land disposal, will be sampled and analyzed based on applicable RCRA code, code group, analytical parameter or profile designation to demonstrate the treatment process is effective and complies with applicable LDR performance treatment standards in accordance with 40 CFR Part 268 and 22 CCR Chapter 18.

Restricted waste residues (treated/untreated) destined for off-site disposal including, but not limited to incineration, fuels, wastewater treatment, recycling, recovery, etc. will be analyzed

and/or evaluated to properly identify regulated constituents in accordance with 40 CFR Part 268 and 22 CCR Chapter 18.

6.2.1 Bin Top Solidification

On occasion, a non-Land Disposal Restricted waste shipment of a solid material may arrive containing a minimal amount of free liquids. In this case, the liquids may be absorbed in situ. Post-treatment analysis consists of a Paint Filter Test to ensure no free liquids are present.

6.2.2 Drum Decant Unit

In this process, free liquids are decanted from drums or other sample containers into bulk storage units where they are separated into immiscible fractions and segregated prior to processing. The general analytical procedure for these activities is shown in Figure 6-3.

The pretreatment analyses serve to segregate compatible groupings of containerized wastes for decanting. This is accomplished by appropriate tests, data from the waste profile, and a knowledge of the waste source. The pretreatment analyses are conducted for each waste container before the decant operation.

After the liquid contents have been removed and the phases have been separated, in-process analyses are performed to indicate the identity of each phase so that the proper disposition can be made.

6.2.3 Stabilization Unit

Stabilization is a process by which waste can be treated to remove free liquids, producing a mixture that has no free liquids and sufficient structural integrity for the landfill. In addition, stabilization can be used to treat (that is, reduce the mobility, immobilize, and/or reduce the toxicity of) certain inorganic components, including some Land Disposal Restricted inorganic compounds.

In this process, the wastes are mixed with a stabilizing agent (for example, lime, cement kiln dust, clean soil, absorbing agents, etc.) and/or suitable reagents (for example, ferrous sulfate, etc.) that cause a chemical reaction producing a treated mixture suitable for land disposal. The general approach, shown in Figure 6-4, is implemented for each batch treatment.

6.2.3.1 Stabilization of Wastes Containing Free Liquids

In this process, wastes that are not Land Disposal Restricted are treated solely to stabilize free liquids. Pretreatment analyses for these wastes consist of the basic mandatory analyses performed on incoming shipments. In addition, the stabilization evaluation test (SET) may be performed on a pre-acceptance sample to ensure the waste's amenability to stabilization. If a SET has not previously been performed, either a SET will be conducted prior to treatment of the waste or a previously developed and established mix ratio will be identified for use. Upon acceptance, the shipment is sent to the "Stabilization Unit" for stabilization. Post-treatment

analysis consists of the Paint Filter Liquids Test to ensure no free liquids are present. In addition, supplemental analyses may be requested by facility management to further evaluate the suitability of the stabilized waste for landfill disposal.

On occasion, a non-Land Disposal Restricted waste shipment of an ordinarily solid material may arrive containing a minimal amount of free liquids. These types of "off-spec" solid waste shipments may be stabilized prior to land disposal, may have the free liquids absorbed or they may be rejected. If the off-spec shipment is to be stabilized, the following steps are taken. After performing the mandatory analyses on the incoming waste shipment sample, and other supplemental analyses requested by facility management, the off-spec solid waste shipment is unloaded into the Stabilization Unit. The waste is stabilized using an appropriate stabilizing agent. Post-treatment analysis consists of a Paint Filter Test to ensure no free liquids are present. In addition, supplemental analyses may be requested by facility management to further evaluate the stabilized waste.

6.2.3.2 Stabilization of Land Disposal Restricted (LDR) Wastes

In this process, certain Land Disposal Restricted (LDR) wastes are stabilized to meet the appropriate LDR treatment standard.

The pretreatment analyses for LDR waste to be stabilized to meet a particular stabilization treatment standard consist of the mandatory analyses performed on the incoming shipment. In addition, a portion of the pre-acceptance sample may be stabilized and then analyzed using the appropriate method to demonstrate that the LDR waste can be stabilized to meet the appropriate treatment standard and to establish the mix ratio of reagent(s) to waste that is used as a guideline. If the stabilization evaluation is not performed on a pretreatment sample, a previously developed and established mix ratio is identified for use.

After acceptance, the LDR waste shipment is sent to the stabilization unit for stabilization. The mix ratio previously established through the process above is used to stabilize each shipment of the LDR waste.

A post-treatment analysis program is conducted to assure that the process continues to be effective in meeting the treatment standards.

The recipe (the mix ratio) developed as described above is followed whenever treating subsequent shipments of the same waste stream (as defined by a waste profile). A sample of each KHF stabilized waste stream is tested during the re-evaluation period to verify, by meeting all applicable Land Disposal Restriction Treatment Standards, that the recipe used continues to be appropriate. Waste streams may be combined for stabilization purposes, in which case, recipe verification will be conducted on each combination of stabilized waste streams.

6.2.4 PCB Draining, Flushing and Storage Unit

Wastes targeted for the PCB Flushing/Storage Unit are assumed to be contaminated with TSCA-regulated levels of PCBs and are not subject to sampling and analysis procedures. Liquid

wastes, primarily from articles and containers, are pumped into the PCB bulk tank for off-site treatment/destruction. PCB solids and the drained PCB articles and containers are buried on-site in a TSCA-approved landfill. The solvents used to flush PCB articles also are pumped to the PCB bulk tank for off-site treatment/destruction.

6.2.5 Solar Evaporation

Aqueous wastes accepted for solar evaporation at the KHF are limited to less than 1% total organics, less than 2% oil and grease and less than 1,000 ppm halogenated organics as described in the applicable operations plan in the Part B application or as limited by compliance requirements with Title V of the Clean Air Act and/or Subpart CC of 40CFR 264. The general analytical approach for evaluating wastes that are treated by solar evaporation is shown in Figure 6-5. Mandatory pretreatment evaluations are performed to screen out wastes that are not acceptable for solar evaporation units (for example, those containing "reactive" levels of sulfides and free cyanides). In addition, a CLWCT may be performed, as necessary, to evaluate the compatibility of the incoming waste with the waste already contained in the treatment system. Wastes also are examined for the presence of visible oil and grease. Finally, wastes are not accepted in surface impoundments unless they comply with regulatory Land Disposal Restrictions.

6.2.6 Hazardous Debris

In this process hazardous debris, as defined in 40 CFR Part 268.2 and 22 CCR 66268.2, is treated by one or more of the specified technologies identified in 40 CFR Part 268.45 and 40 CCR 66268.45.

Pretreatment analysis consists of the visual inspection of the waste, conducted during the incoming shipment procedures, in order to confirm that the selected method of treatment is appropriate based on the components of the hazardous debris. In addition, supplemental analyses may be performed at the request of facility management to further evaluate the waste for treatment. The general analytical approach for evaluating debris wastes is shown in Figures 6-2 and 6-4.

Post-treatment analysis consists of a visual inspection of the treated hazardous debris performed as necessary to confirm that the hazardous debris treatment technology conducted has treated the waste to meet the designated performance and/or design and operating standards and any contaminant restrictions identified in 40 CFR Part 268.45 and 22 CCR 66268.45.

6.3 Final Disposal

The general approach shown in Figure 6-6 in Appendix WAP-A ensures the proper management of hazardous wastes that are disposed of by secure landfilling. A test may be performed to confirm the absence of free liquids. Other tests may confirm that the wastes to be landfilled are not restricted by State and/or Federal regulations. As required by 40 CFR 268 and/or 22 CCR 66268, the generator may be required to certify that his/her waste complies with regulatory Land Disposal Restrictions.

7.0 QUALITY ASSURANCE/QUALITY CONTROL

The following quality assurance/quality control (QA/QC or "quality") information for this facility is being provided as required by 40 CFR Part 270.30(e) and 22 CCR 66270.30(e) and in accordance with the following EPA guidance documents:

- Handbook for Analytical Quality Control in Water and Wastewater Laboratories, EPA 600/4-79-019, March 1979, U.S. Environmental Protection Agency (U.S. EPA), Environmental Monitoring and Support Laboratory (EMSL), Cincinnati, OH, March 1979 (available from EMSL, Cincinnati, OH 45268).

- Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, Third Edition, Final Update I, U.S. EPA, Office of Solid Waste, Washington, DC, July 1992, Chapter One (available from Superintendent of Documents, Government Printing Office, Washington, DC 20402).

Quality procedures are applicable to both sampling procedures and analytical techniques. This section does not provide specific performance standards of quality control procedures for individual sampling and analysis techniques. Such specifics are defined on a corporate-wide basis for all company facilities. The specific performance standards are dynamic and are revised as warranted to reflect technological advances in sampling and analytical techniques. These performance standards are described in corporate policies, which are maintained and used at this facility and which are available for regulatory review. Portions of these policies have been summarized in the following sections.

7.1 Sampling Program

Sampling procedures for facility operations are described in Section 2 of the WAP. The selection of the sample collection device depends on the type of sample, the sample container, the sampling location and the nature and distribution of the waste components. In general, the methodologies used for specific materials correspond to those referenced in 40 CFR Part 261, Appendix I, and 22 CCR 66261, Appendix I. The selection and use of the sampling device is supervised or performed by a person thoroughly familiar with the sampling requirements.

Sampling equipment is constructed of nonreactive materials such as glass, PVC plastic, aluminum, or stainless steel. Care is taken in the selection of the sampling device to prevent contamination of the sample and to ensure compatibility of materials. For example, glass bottles are not used to collect hydrofluoric acid wastes.

With some exceptions (see Section 5.1.1 of this WAP), bulk and containerized waste shipments are sampled. Individual container samples may be composited prior to analysis, provided that individual samples are compatible.

7.2 Analytical Program

Waste Management has developed a quality program of analytical quality control practices and procedures and review to ensure that precision and accuracy are maintained throughout its laboratories. Waste Management facility laboratories are required to participate in this program. Noncompany laboratories employed by the company demonstrate quality control practices that are comparable to the company's program.

The quality control program is based on EPA's Handbook for Analytical Quality Control in Water and Wastewater Laboratories. Good laboratory practices which encompass sampling, sample handling, housekeeping and safety are maintained at all laboratories.

7.3 Conclusion

The aforementioned sampling and analytical quality practices help ensure that the data obtained are precise and accurate for the waste stream being sampled. The analytical results are used by facility management to decide whether or not to accept a particular waste and, upon acceptance, to determine the appropriate method of treatment, storage, and disposal. Results are also important to ensure that wastes are managed properly by the facility and that incompatible wastes are not inadvertently combined. Just as these results are important so is the quality of these results. Thus, the quality of the analytical data, the thoroughness and care with which the sampling and analyses are performed and reported, provides an important basis for day-to-day operational decisions.

APPENDIX WAP-A

TABLES AND FIGURES

TABLE 2-1
SAMPLING METHODS AND EQUIPMENT

Material	Method*	Equipment
Extremely viscous liquid	ASTM D140 ASTM E300 ASTM D5495	Tubing, trier or coliwasa
Crushed or powdered material	ASTM D346 ASTM E300 ASTM D5633 ASTM D5451	Tubing, trier, scoop, or shovel
Soil or rock-like material	ASTM D420 ASTM E300 ASTM D5633 ASTM D5451	Tubing, trier, auger, scoop, or shovel
Soil-like material	ASTM D1452 ASTM E300 ASTM D5633 ASTM D5451	Tubing, trier, auger, scoop, or shovel
Fly ash-like material	ASTM D2234 ASTM E300 ASTM D5633 ASTM D5451	Tubing, trier, auger, scoop, or shovel
Containerized liquids	SW-846 ASTM E300 ASTM D5495	Coliwasa or tubing, bomb sampler, weighted bottle
Liquids in impoundments	SW-846 ASTM D5358 ASTM D4136	Bomb sampler, tubing, weighted bottle, and/or dipper sampler

*ASTM refers to Annual Book of ASTM Standards, American Society for Testing Materials, Philadelphia, PA, 1994 or most recent edition. SW-846 refers to Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, Third Edition, U.S. Environmental Protection Agency, Office of Solid Waste, Washington, DC, September 1986, as amended by Final Update I (July 1992), Final Update II (September 1994), Final Update IIA (August 1993), and Final Update IIB (January 1995), or more recent edition or update.

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FIGURE 3-1

USE OF MANDATORY ANALYSES

PARAMETER	IDENTIFICATION[1]		PRETREATMENT, IN-PROCESS OR POST-TREATMENT APPLICABILITY[2]							
	Pre-Acceptance	Incoming Waste	Storage	Bin Top Solidification	Drum Decant	Stabilization	PCB Flushing/ Storage	Solar Evaporation	Hazardous Debris	Final Disposal (Landfill)
Physical Description	M	I	O		O	O		O		O
Flammability Potential	M	I	O		O			O		O
Water Compatibility	M	I	O		O					O
pH screen	M	I	O		O			O		
Cyanides Screen	M	I	O		O	O		O		O
Sulfides Screen	M	I	O		O	O		O		O
Oxidizer Screen	M	I	O		O	O		O		O

M = Mandatory; test must be conducted.
I = Mandatory for Initial Load, subsequent loads tested if inspection or paperwork suspect
O = Optional; test may be conducted to identify waste characteristics needed for processes.

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[1]See WAP Section 3 (sections 3.0 and 3.1) for details, additional requirements, explanation of terms and exceptions. See also sections 4.1, 4.2 and 5.1.1 for exceptions.

[2]See WAP Section 6 (sections 6.0 through 6.3) for details, additional requirements, explanation of terms and exceptions.

FIGURE 3-2

USE OF SUPPLEMENTAL ANALYSES

PARAMETER	IDENTIFICATION[1]		PRETREATMENT, IN-PROCESS OR POST-TREATMENT APPLICABILITY[2]						
	Pre-Acceptance	Incoming Waste	Storage	Drum Decant	Stabilization	PCB Flushing/ Storage	Solar Evaporation	Hazardous Debris	Final Disposal (Landfill)
Percent Acidity	Facility Management Determines the Applicability of These Parameters to Pre-acceptance Samples and Incoming Wastes								O
Percent Alkalinity									O
Commingled Liquid Waste Compatibility				O			O		
Amenable Cyanides				O	O				O
Total Cyanides				O	O				O
Density			O	O					
Flash Point			O						O
Free Liquids					O				O

O = Optional; test may be conducted to identify waste characteristics needed for processes.

[1]See WAP Section 3 (sections 3.0 and 3.1) for details, additional requirements, explanation of terms and exceptions. See also sections 4.1, 4.2 and 5.1.1 for exceptions.

[2]See WAP Section 6 (sections 6.0 through 6.3) for details, additional requirements, explanation of terms and exceptions.

FIGURE 3-2 (Continued)

USE OF SUPPLEMENTAL ANALYSES

PARAMETER	IDENTIFICATION[1]		PRETREATMENT, IN-PROCESS OR POST-TREATMENT APPLICABILITY[2]						
	Pre-Acceptance	Incoming Waste	Storage	Drum Decant	Stabilization	PCB Flushing/ Storage	Solar Evaporation	Hazardous Debris	Final Disposal (Landfill)
DOT Oxidizer	Facility Management Determines the Applicability of These Parameters to Pre-acceptance Samples and Incoming Wastes				O				
PCBs			O	O	O				O
Stabilization Evaluation Test (SET)					O				
TCLP					O		O		O
Waste Extraction Test (WET)					O				O

O = Optional; test may be conducted to identify waste characteristics needed for processes.

[1]See WAP Section 3 (sections 3.0 and 3.1) for details, additional requirements, explanation of terms and exceptions. See also sections 4.1, 4.2 and 5.1.1 for exceptions.

[2]See WAP Section 6 (sections 6.0 through 6.3) for details, additional requirements, explanation of terms and exceptions.

WASTE MANAGEMENT

Chemical Waste Management, Inc.

Kettleman Hills Facility
35251 Old Skyline Rd., PO Box 471, Kettleman City, CA 93239
(559) 386-9711

Profile #

Tracking #

Generator's Waste Profile Sheet

(Please carefully read the instructions before completing this form. Please print in ink or type)

Sales #

Service Agreement on file? Yes ☐ No ☐ Classification: Class I ☐ Class II ☐ Daily Cover ☐ Non Haz ☐

TSDF Requested _____ Technology requested _____

☐ Check here if this is a recertification ☐ Check here if a Certificate of Destruction or Disposal is required

GENERAL INFORMATION

1. GENERATOR NAME: _____ Generator USEPA ID: _____
2. Site Location: _____ Billing Address: ☐ Same: _____
3. Technical Contact/Phone _____ _____
4. Alternate Contact/Phone _____ Billing Contact/Phone _____
   Fax Number: _____ Fax Number: _____

PROPERTIES AND COMPOSITION

5. A. Process Generating Waste: _____
   B. Is the waste from a CERCLA or state mandated cleanup? Yes ☐ No ☐ Location Name: _____
   C. Is your waste a result of a clean-up action and qualifies for reduced CA BOE Tax? Yes ☐ No ☐
6. Waste Name: _____
7. A. Is this a USEPA hazardous waste (40 CFR Part 261)? Yes ☐ No ☐
   B. If D001, D002, D003, D004-D043 do any underlying hazardous constituents (UHC's) apply? Yes ☐ No ☐ (If yes, attach UHC form)
   C. If using alternative LDR treatment standards for soil (40CFR 268.49), do any UHC's apply? Yes ☐ No ☐ (If yes, attach UHC form)
   D. Does this waste contain debris (List size and type in chemical composition)? Yes ☐ No ☐
   E. Identify ALL USEPA listed and characteristic waste code numbers (D, F, K, P, U): _____
   State Waste Codes: _____
   F. Does this waste contain any Class I or Class II ozone depleting substances? Yes ☐ (List in chemical composition) No ☐
8. Physical state @ 70°F: A. Solid ☐ Liquid ☐ Both ☐ Gas ☐ B. Single Layer ☐ Multilayer ☐ C. Free liquid range _____ to _____ %
9. A. pH Range _____ to _____ or Not Applicable ☐ B. Strong Odor ☐ describe _____ C. Color _____
10. Liquid Flash Point: < 73°F ☐ 73-99°F ☐ 100-139°F ☐ 140-199°F ☐ > 200°F ☐ N.A. ☐
11. CHEMICAL COMPOSITION: List ALL constituents (including halogenated organics and UHC's) present in any concentration and forward available analysis.

Constituents	Range	Units	Constituents	Range	Units

TOTAL COMPOSITION MUST EQUAL OR EXCEED 100%

12. OTHER: PCB's: if yes, concentration (dry weight) _____ ppm, PCB's regulated by 40 CFR 761 ☐ Pyrophoric ☐ Explosive ☐ Radioactive ☐
    Water Reactive ☐ Shock Sensitive ☐ Oxidizer ☐ Carcinogen ☐ Infectious ☐ Other _____
13. If Benzene, concentration _____ ppm. Is the waste subject to the Benzene Waste Operation NESHAP? Yes ☐ No ☐ Unknown ☐
14. Is the waste subject to RCRA Subpart CC controls? Yes ☐ No ☐ Volatile organic concentration, if known _____ ppmw.
15. If the waste is subject to the land ban and meets the treatment standards, check here ☐ and supply analytical results.

SHIPPING INFORMATION

16. PACKAGING: Bulk Solid ☐ Type/Size: _____ Bulk Liquid ☐ Type/Size: _____ Drum ☐ Type/Size: _____ Other _____
17. SHIPPING FREQUENCY: Units _____ Per: ☐ Month ☐ Qtr. ☐ Year ☐ One Time ☐ Other _____
18. SHIPPING INFORMATION: US DOT Shipping Name: _____
    Hazard Class: _____ Packaging Group: _____ Reportable Quantity (lbs, kg): _____

SAMPLING INFORMATION

19. A. ☐ Sample (attach chain of custody) Sample source (drum, lagoon, pond, tank, vat, etc.) _____
    Date Sampled: _____ Sampler's Name/Company: _____
    B. Generator's Agent Supervision Sampling _____ 20. ☐ No sample required (see instructions)

GENERATOR'S CERTIFICATION

I hereby certify that all information submitted in this and all attached documents contains true and accurate descriptions of this waste. Any sample submitted is representative as defined in 40 CFR 261 - Appendix 1 or by using an equivalent method. All relevant information regarding known or suspected hazards in the possession of the generator has been disclosed. I authorize CWM to obtain a sample from any waste shipment for purposes of recertification. If this certification is made by a broker, the undersigned signs as authorized agent of the generator and has confirmed the information contained in the Profile Sheet from information provided by the generator and additional information as it has determined to be reasonably necessary.

_____ _____ _____

gnature Printed (or typed) name and title Date

If the waste profile is approved, Chemical Waste Management, Inc. has the appropriate permits and will accept the waste pursuant to our agreement.

CWM Form 6000-DI replaces the following forms: CWM-51, CWM 6000, CWM 50-A-2, CWM 50-B, CWM 6000C, and CWM Form 6000-D. WM101

CWM-KHF 2002

Figure 4.1

FIGURE 4-2
OVERVIEW OF THE PRE-ACCEPTANCE PROCESS

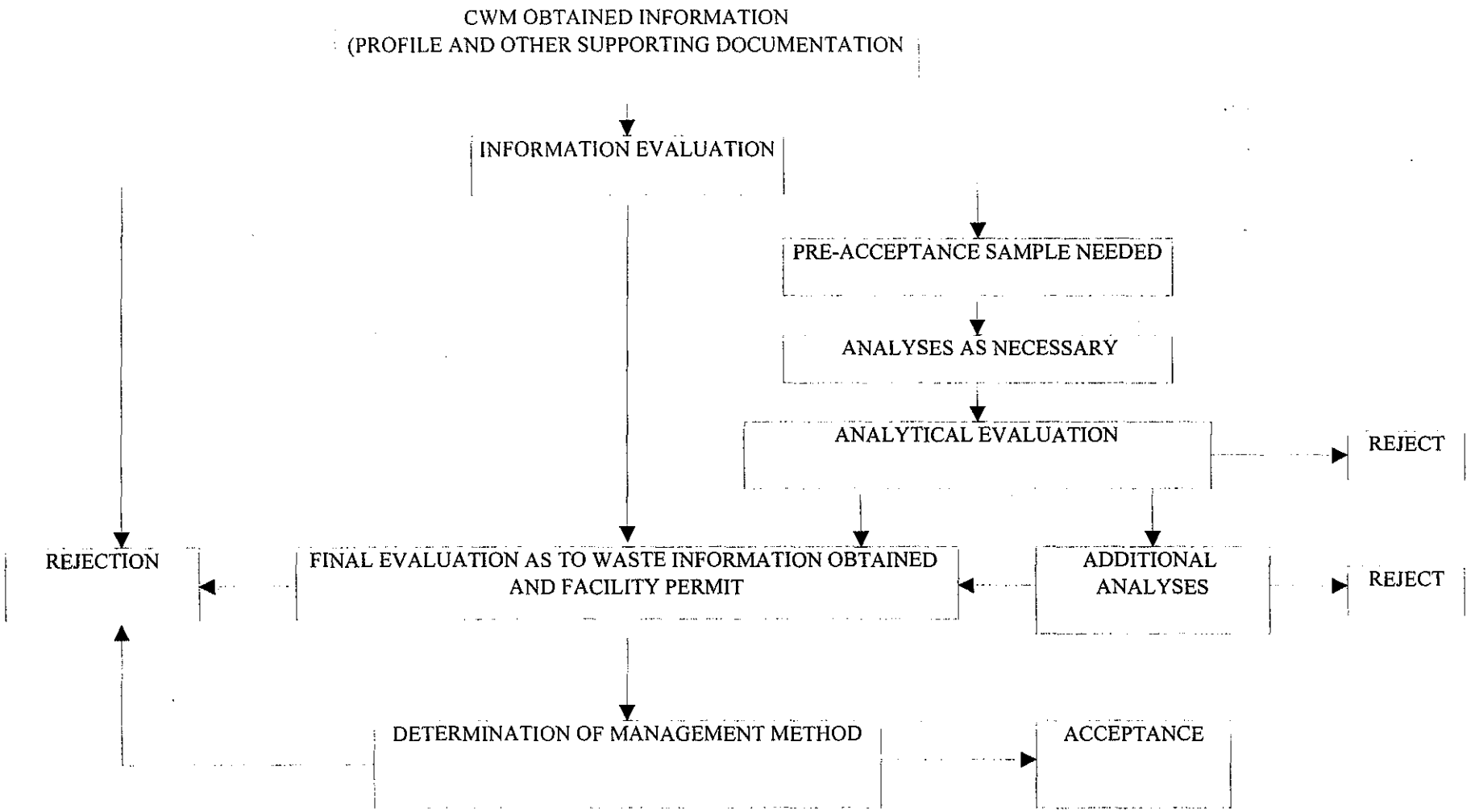


FIGURE 5-1
OVERVIEW OF THE INCOMING WASTE SHIPMENT IDENTIFICATION PROCESS

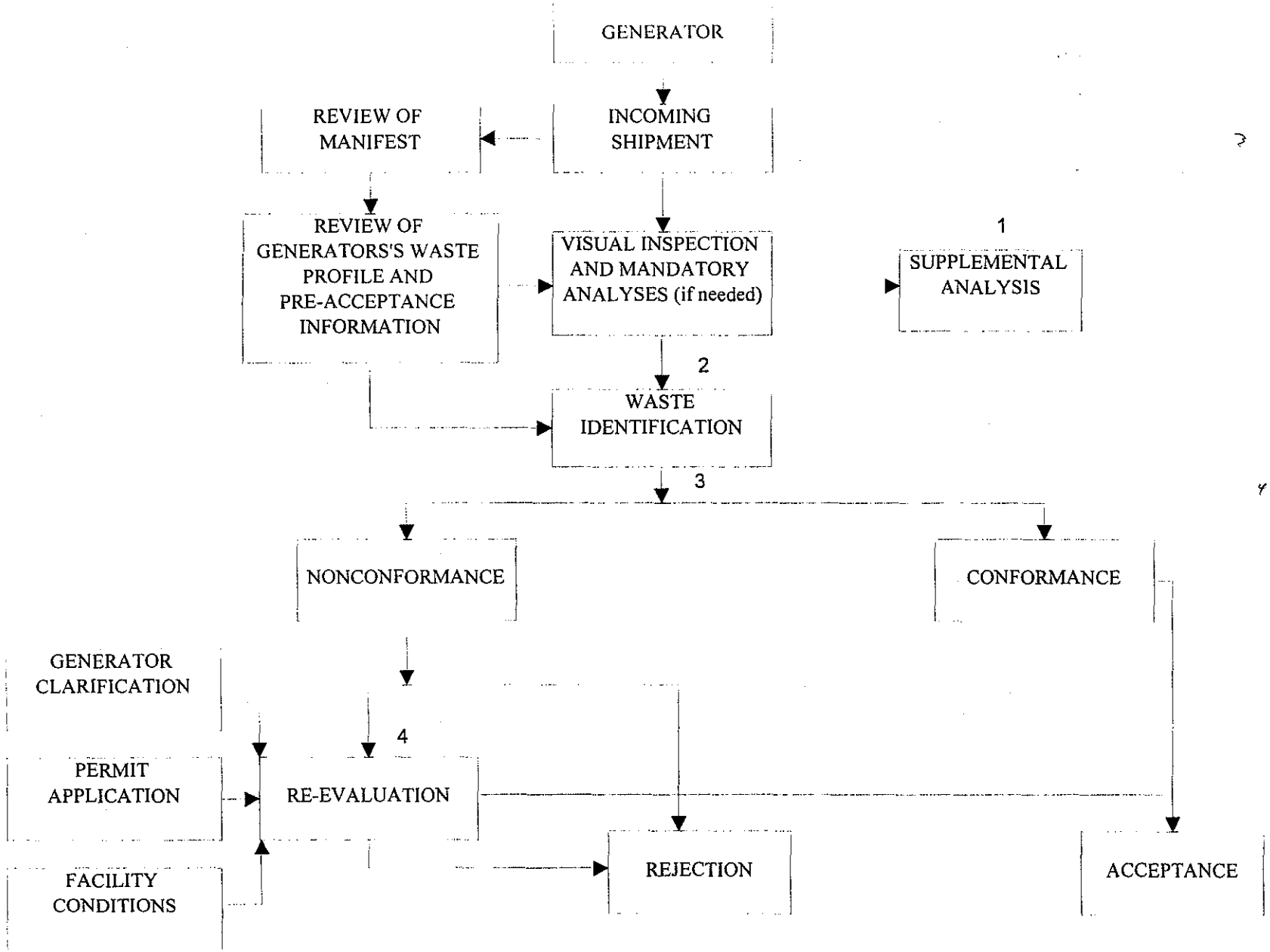


FIGURE 6-1
STORAGE

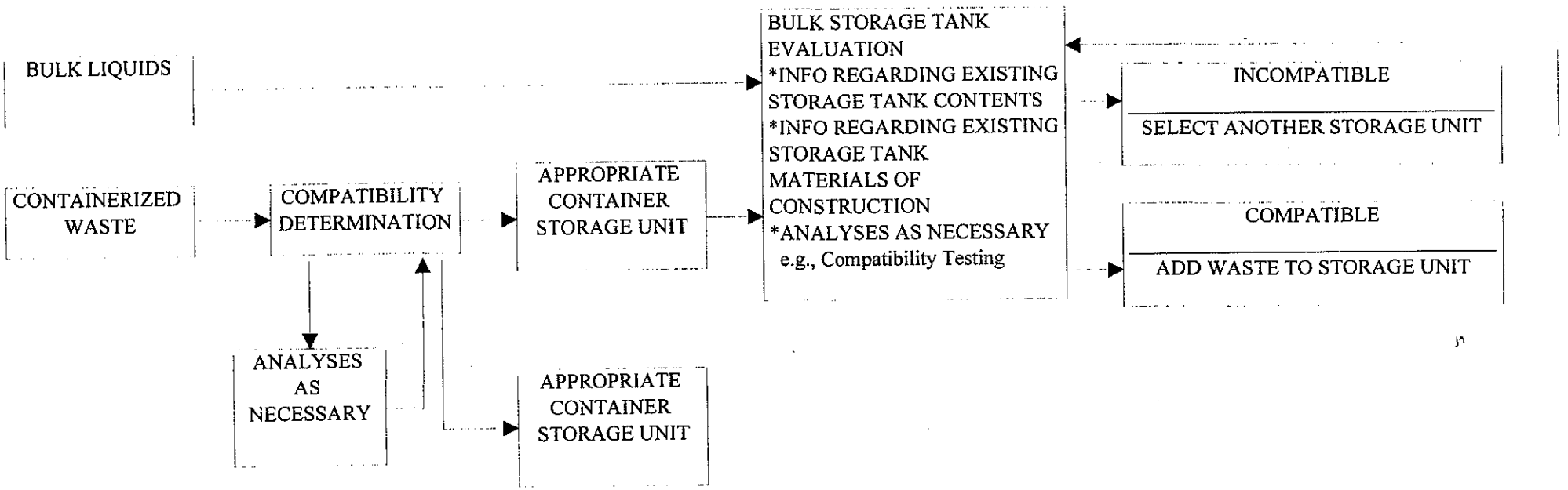


FIGURE 6-2
MACROENCAPSULATION

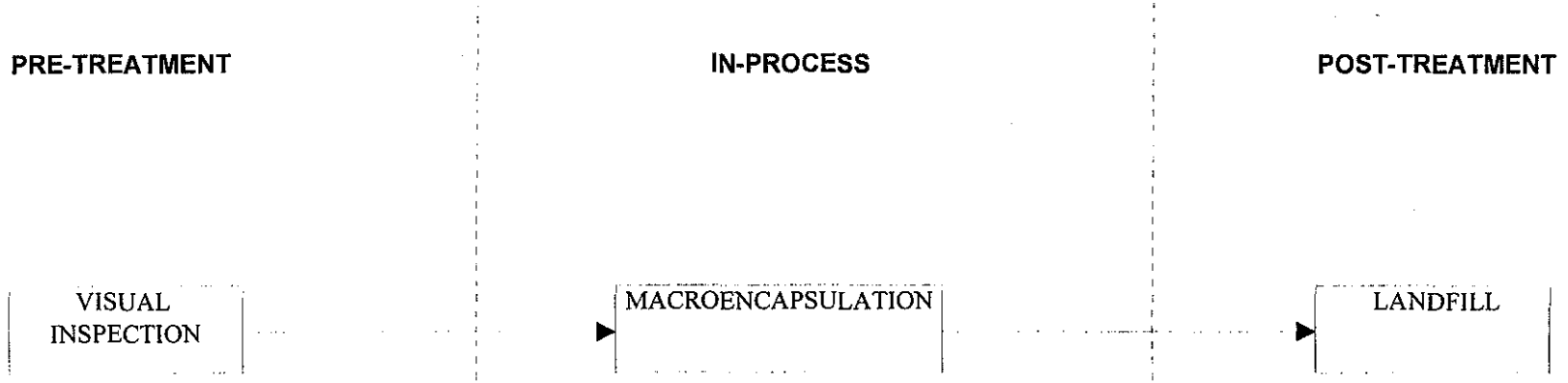
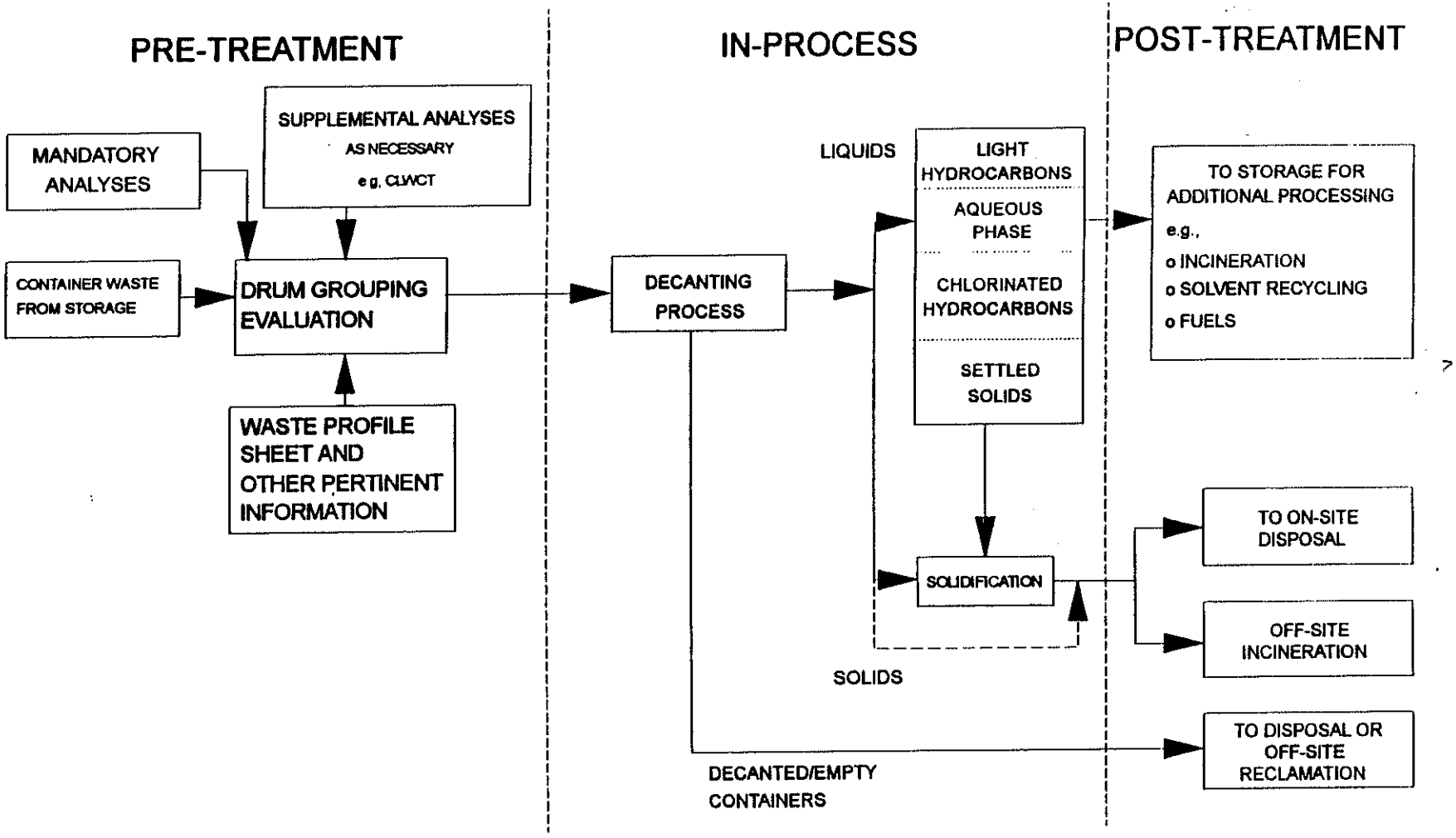
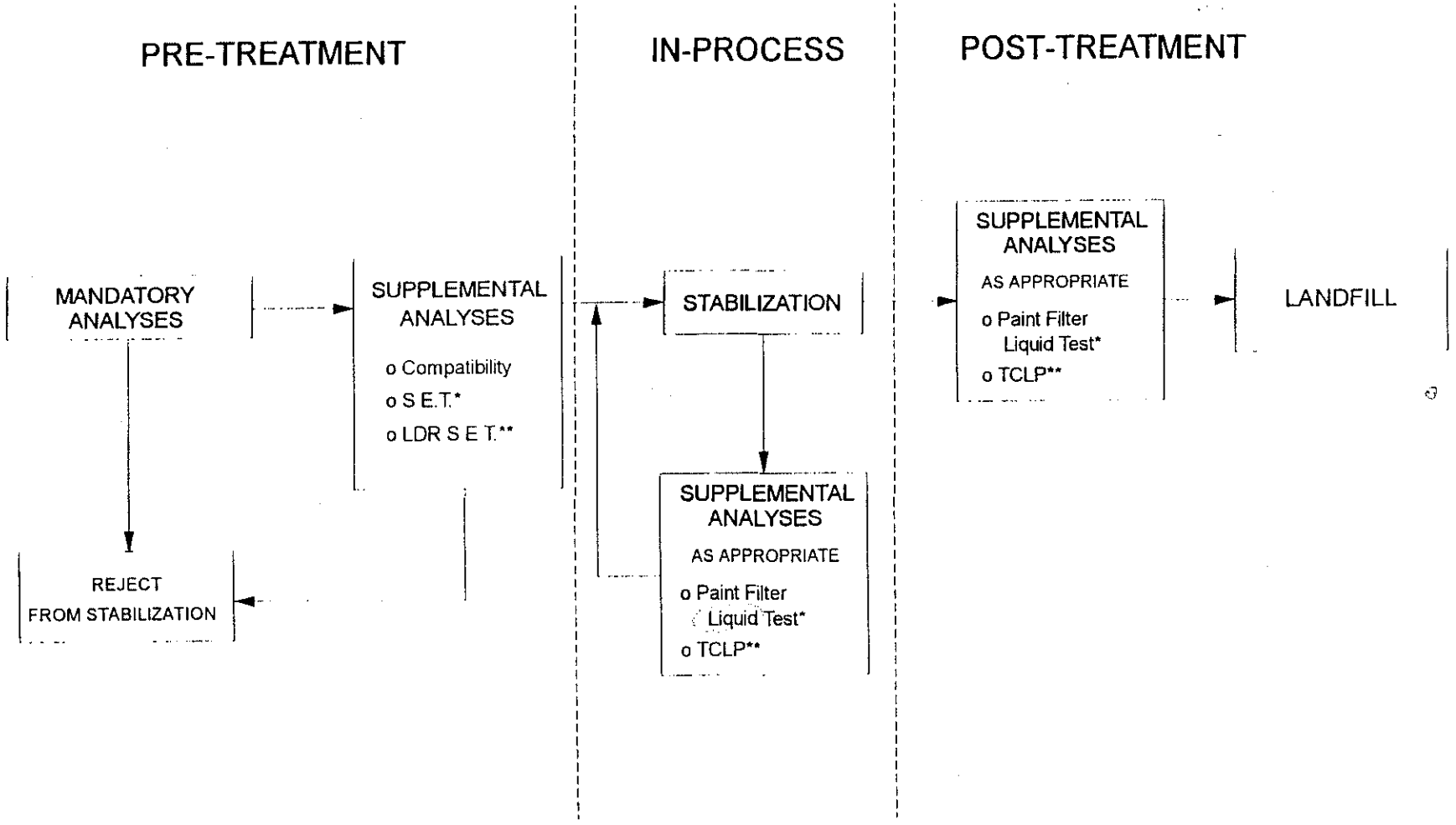


FIGURE 6-3
DECANTING LIQUID



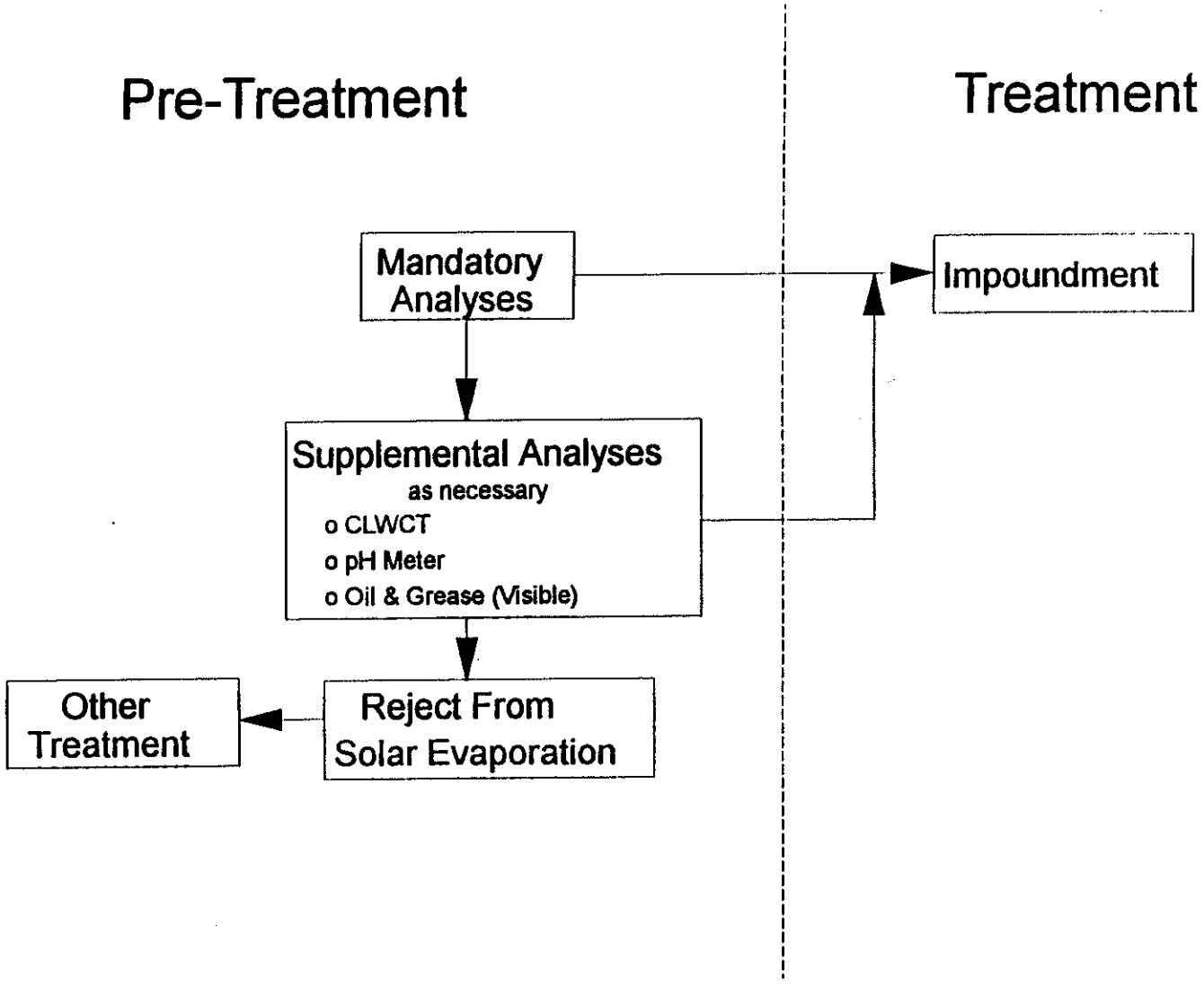
CWM KHF 7/94

FIGURE 6-4
STABILIZATION



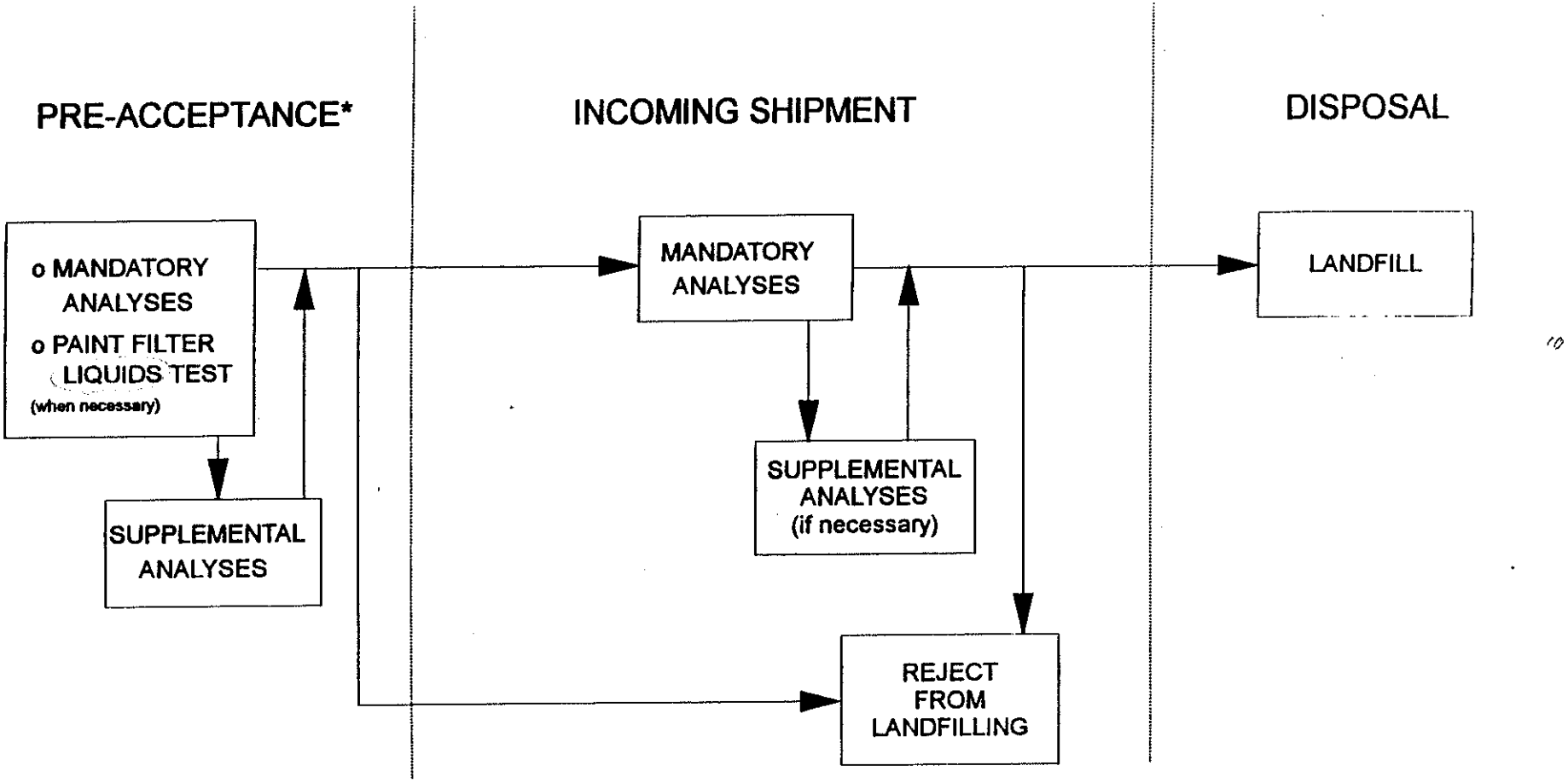
*For Wastes Exhibiting Free Liquids
**For LDR Wastes

FIGURE 6-5
SOLAR EVAPORATION



CVM KHF 7/94

FIGURE 6-6
LANDFILL



*A pre-acceptance sample may not always be necessary.

APPENDIX WAP-B

ANALYTICAL PROCEDURES

ANALYTICAL PROCEDURES

The following analytical procedures are designed to identify or screen waste. They are used by CWM/Waste Management, based upon its operating experience, as rapid but effective means for establishing key decision parameters pertinent to proper waste management. Analytical procedures, not listed below, may be added as necessary and will be taken from the references listed at the end of this appendix or other authoritative sources, e.g., Association of Official Analytical Chemists (AOAC), or will be developed by Waste Management and meet Waste Management performance standards.

It should be noted that the information presented in this appendix is generic in character. Therefore, certain test methods are discussed which may pertain to treatment or disposal processes that are excluded from the facility for which the foregoing waste analysis plan is presented.

I. UNIQUE ANALYTICAL PROCEDURES

The following CWM/Waste Management-developed analytical procedure have been found by CWM/Waste Management to provide important information pertinent to certain processes. In some cases, these tests provide information not available from standard analytical procedures found in Section II, which follows. The methods described below are based on ASTM standards or standard procedures recognized by EPA or are based on procedures and protocol formulated by CWM/Waste Management and meet CWM/Waste Management performance standards. These tests provide important operational information.

Beilstein Screen - This screen consists of heating a copper wire in a flame until it is red hot, then dipping the wire into a portion of the sample and reheating the wire in a flame. The presence of a green flame during the reheating of the wire is considered a positive and indicates the presence of halogens in the sample.

Bench-Scale Treatment Evaluation - Samples of wastes are combined with samples of other wastes or reagents at predetermined ratios. Further testing may be required in order to confirm that the desired reaction has occurred.

Microwave-aided Digestion - A portion of sample is weighed into an appropriate microwave digestion vessel and digested using an acid or acid mixture. The vessel is heated in a microwave oven. After cooling, the contents are diluted to volume, filtered and analyzed by appropriate methods.

Quick Leach Extraction - An amount of sample is mixed with the appropriate extraction fluid and stirred for a designated time period. After filtration, the pH and/or metals content are determined using the appropriate methods.

Radioactivity Screen - A sample of the material is passed by a geiger counter or survey meter. Radioactivity levels above background are noted, recorded and investigated.

Reagent Compatibility Screen - Equal portions of stabilization reagent and waste are mixed. The generation of any unacceptable or adverse reactions are evaluated and noted.

Stabilization Evaluation - The waste to be stabilized is mixed with at least one combination of cement kiln dust and/or other suitable reagent(s). Heat change (as evidence of curing) which occurs is recorded as the waste/reagent(s) mixture is "setting". The occurrence of any violent reactions of reagent(s) to waste sample is noted.

Dissolved Sulfides - An aliquot of waste is mixed with distilled water. The solution/slurry is filtered through filter paper and the resultant filtrate is then analyzed for sulfide. Antimony potassium tartrate and hydrochloric acid are added and the color produced is visually compared with standards.

PARAMETER	METHOD	REFERENCE

Sample Work-Up Techniques

General Extractions
- Extraction Procedure (EP) Toxicity Test Method and Structural Integrity Test 1/1310A
- Toxicity Characteristic Leaching Procedure (TCLP) 1/1311
- Waste Extraction Test (WET) Procedures 7/

Metals Acid Digestions
- For flame atomic absorption spectroscopy (AAS)or inductively coupled plasma spectroscopy (ICP) 1/3005A, 3010A*
- -- Microwave assisted 1/3015; 2/3030K; 3/D4309, D5258

Organic Extractions and Cleanups
- Separatory funnel liquid-liquid extraction 1/3510C
- Continuous liquid-liquid extraction 1/3520C
- Solid phase extraction (SPE) 1/3535
- Soxhlet extraction 1/3540C, 3541
- Sonication extraction 1/3550B

Waste dilution 1/3580A, 3585
Alumina cleanup 1/3610B, 3611B
Florisil cleanup 1/3620B
Silica gel cleanup 1/3630C
Gel-permeation cleanup 1/3640A
Acid-base partition cleanup 1/3650B
Sulfur cleanup 1/3660B
Sulfuric acid/permanganate cleanup 1/3665A

PARAMETER	METHOD	REFERENCE

Elemental Analytical Methods

Inductively coupled plasma atomic emission spectroscopy (ICP) 1/6010B

Mercury (manual cold/vapor technique)
- In liquid waste 1/7470A*
- In solid or semi/solid waste 1/7471A*

Organic Analytical Methods

Gas Chromatography Methods
- Polychlorinated biphenals (PCBs) 8082; 5/

Gas Chromatography/Mass Spectroscopy Methods
- Volatile Organics 1/8240B, 8260B; 7/624
- Semi-volatile organics 1/8250A; 8270C; 7/625

Screening Methods
- Physical description 3/D4979
- Flammability potential screen 3/D4982
- Water compatibility 3/D5058C
- Oxidizer screen 3/D4981
- pH screen 3/D4980
- Sulfide screen 3/D4978
- Cyanide screen 3/D5049
- Commingled waste compatibility 3/D5058A
- Polymerization potential 3/D5058B
- Paint filter test 1/9095A
- Bulk density and apparent specific gravity screen 3/D5057
- Polychlorinated biphenyls (PCBs) screen 1/4020

Miscellaneous Analytical Methods
- Acidity 2/2310*
- Alkalinity 2/2320*
- Residual chlorine 2/4500Cl
- Conductivity/conductance 1/9050A; 2/2510; 3/D1125; 4/120.1
- Cyanides
  - Total and amenable (to chlorination) 1/9010B, 9012A, 9013;
    cyanides ..... 2/4500CN⁻C,G;4/335.1

PARAMETER	METHOD	REFERENCE

Flash point
- Pensky-Martens closed-cup method 1/1010*; 3/D93

DOT Oxidizer Test 6/*

pH measurement ..... 1/9040B, 9041A, 9045C; 2/4500H^+; 3/E70; 4/150.1

Specific gravity 2/2710F; 3/D70, D891, D1217, D1429

Sulfides
- Extractable sulfides 1/9031
- Soluble sulfides ..... 1/9215; 2/4500S^{2-}

Viscosity 3/D88, D446, D2983

Water content 3/D95*, D3173, D4006, E203

California Percent Moisture Test 8/

References

The leading digit of the reference numbers above are keyed to the numbered publications below.

1/ Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, Third Edition, U.S. Environmental Protection Agency, Office of Solid Waste, Washington, DC, September 1986, as amended by Final Update I (July 1992), Final Update II (September 1994), Final Update IIA (August 1993), and Final Update IIB (January 1995), or more recent edition, update or revision including Proposed Update III (available from Superintendent of Documents, Government Printing Office, Washington, DC 20402).

2/ Standard Methods for the Examination of Water and Wastewater, 18th Edition, American Public Health Association (APHA), American Water Works Association, Water Environment Federation, 1992, or more recent edition or update (available from APHA, 1015 Fifteenth Street, NW, Washington, DC 20005).

3/ Annual Book of ASTM Standards, American Society for Testing and Materials (ASTM), 1993, or more recent edition or revision (available from 1916 Race Street, Philadelphia, PA 19013).

4/ Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. Environmental Protection Agency, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio, 1979, as revised March 1983, or more recent revision or technical addition (available from EPA, Cincinnati, OH 45268).

5/ Bellar, T. A., and Lichtenberg, J. J., "The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils", EPA-600/4-81-045, U.S. Environmental Protection Agency, Environmental Monitoring and Support Laboratory, Cincinnati, 1982.

6/ U.S. Department of Transportation (DOT) test for the presence of oxidizers: Dangerous Goods Special Bulletin, TD2711E, 155W0710-0914, Canadian Transport Agency, April 1987.

7/ "Waste Extraction Test (WET) Procedures", State of California Environmental Health Standards -- Hazardous Waste regulations, 22 CCR 66261 Appendix II.

8/ California Code of Regulations Title 22 66264.318

Standard analytical procedures not listed here, which may be needed, will be taken from the above-referenced sources or other recognized sources, for example, Official Methods of Analysis of the Association of Official Analytical Chemists (AOAC), 15th Edition, AOAC, Arlington, Virginia, 1990, or more recent supplements or editions (available from AOAC, 2200 Wilson Blvd., Suite 400, Arlington, VA 22201).

APPENDIX WAP-C

LAND DISPOSAL RESTRICTION SAMPLING

LAND DISPOSAL RESTRICTION SAMPLING

The procedures described herein represent the sampling and analytical procedures established for use at the facility for the treatment, storage and disposal of Land Disposal Restricted hazardous waste, see 40 CFR Part 268.

I. LEACHATE

On-site generated untreated leachate will be sampled and analyzed for conformance to the treatment standards for F039 as follows:

1. The untreated leachate, F039, will be sampled, analyzed and evaluated initially for constituents on the F039 Treatment Standards list. This constitutes the "initial characterization."

2. Subsequent sampling and analysis will be reviewed to ensure the leachate is being managed appropriately based on the land disposal restrictions of 40 CFR Part 268.

The decision to accept off-site generated leachate will be conducted as detailed in the pre-acceptance section of the WAP.

APPENDIX WAP-E

THERMAL MEASUREMENT PROCEDURE FOR BULK SOLID WASTES

THERMAL MEASUREMENT PROCEDURE FOR BULK SOLID WASTES

1. The sampler shall observe the physical condition of all bulk solid wastes when obtaining a sample.

2. Upon receipt of waste streams which may retain residual process heat (for example, furnace slag, incinerator ash, etc.), or any waste stream which appears to have an elevated temperature, the sampler shall measure the temperature of the waste using the temperature sensing device.

3. The temperature sensing device shall be stored in the sampler's room.

4. The temperature sensing device shall be used in accordance with the manufacturer's operating instructions.

5. The temperature reading shall be recorded in the log book.

6. If the temperature of the waste is above 150°F, the waste shall not be placed in the landfill. The waste shipment shall be staged until the temperature has decreased below 150°F.